WHAT IS CLAIMED IS:

1. An apparatus for repair of an aneurysm in a blood vessel of a patient comprising:

a tube having a first end, a second end and a wall extending between the first and second ends, the tube shaped to be disposed at least partially within the aneurysm; and

at least one expandable body attached to the tube wall including at least one microstructure having an attached end attached to the body and a free end in an undeployed position, wherein expansion of the at least one expandable body creates forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end of the at least one microstructure projects radially outwardly from the tube.

2. An apparatus as in claim 1, wherein the at least one expandable body is attached to an exterior surface of the tube wall.

3. An apparatus as in claim 1, wherein the at least one expandable body is embedded within the tube wall.

4. An apparatus as in claim 1, wherein the at least one expandable body is attached to an interior surface of the tube wall.

5. An apparatus as in claim 1, wherein the at least one microstructure comprises a plurality of microstructures positioned to project radially outwardly from the tube near the first end, the second end or near both ends.

6. An apparatus as in claim 1, wherein the at least one microstructure projects radially outwardly from the tube a distance sufficient to penetrate the blood vessel to reduce migration of the apparatus within the blood vessel.

7. An apparatus as in claim 1, wherein the at least one microstructure comprises a plurality wherein the plurality of microstructures are arranged to reduce leakage between the apparatus and the blood vessel.

8. An apparatus as in claim 1, wherein the blood vessel comprises a segment of an aorta having two iliac arteries therewith at an aortic bifurcation, and wherein the tube further comprises an opening between the first end and the second end to align with one of the iliac arteries.

9. An apparatus as in claim 8, wherein the at least one microstructure further comprises a plurality of microstructures positioned to project radially outwardly from the tube around the opening.

10. An apparatus as in claim 1, wherein the blood vessel comprises a segment of an aorta having two iliac arteries therewith at an aortic bifurcation, and wherein the tube is shaped to be disposed within one of the two iliac arteries and to connect with another tube positioned within the segment of the aorta.

11. An apparatus as in claim 10, wherein the plurality of microstructures project radially outwardly from the tube a distance sufficient to penetrate the another tube to attach the tube to the another tube.

12. An apparatus as in claim 11, wherein the distance is insufficient to penetrate through and extend beyond the another tube.

13. An apparatus as in claim 11, wherein the distance is sufficient to additionally penetrate the aorta.

14. An apparatus as in claim 1, further comprising a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

15. An apparatus as in claim 14, wherein the material comprises DNA, a drug, VEGF, thrombin, collagen or any combination of these.

16. An apparatus as in claim 14, wherein the material is coated on a surface of the at least one microstructure.

17. An apparatus as in claim 14, wherein the material is held in a lumen within the at least one microstructure.

18. An apparatus as in claim 1, wherein the at least one expandable body has a proximal end, a distal end, and a longitudinal axis therebetween, and wherein the at least one microstructure comprises a plurality of microstructures, each microstructure having first and second supports affixed to associate first and second adjacent portions of the radially expandable body,

expansion of the expandable body within the patient effecting relative movement between the associated first and second portions of the expandable body,

the relative movement deploying the microstructures to the deployed position with the free end projecting radially outwardly from the longitudinal axis.

19. An apparatus as in claim 18, wherein the free end has a pointed shape.

20. An apparatus as in claim 19, wherein the pointed shape includes a single point or a multiple point.

21. An apparatus as in claim 19, wherein the free end has an arrow shape including a pointed tip and at least one undercut that resists withdrawal of the free end from the blood vessel.

22. An apparatus as in claim 18,wherein the relative movement of the associated first and second portions of the expandable body comprises circumferential movement of the first portion relative to the second portion when the expandable body expands radially.

23. An apparatus as in claim 22, wherein the circumferential movement pulls the affixed ends of the first and second supports apart which moves the free end.

24. An apparatus as in claim 18, wherein the first and second supports comprise elongate shafts extending between the free end and the associated first and second adjacent portions of the radially expandable body.

25. An apparatus as in claim 24, wherein the relative movement of the associated first and second portions of the expandable body comprises moving the associated first and second portions apart so that the supports pull the free end in opposite directions causing the free end to project radially outwardly.

26. A system for repair of an aneurysm in a blood vessel in a patient comprising:

a tube having a first end, a second end and a wall extending between the first and second ends, the tube shaped to be disposed at least partially within the aneurysm; and

a first expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and at least one microstructure having an attached end attached to the body and

a free end in an undeployed position, expansion of the body creating forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end projects radially outwardly from the longitudinal axis,

the first expandable body sized for positioning within the tube so that expansion of the body penetrates the at least one microstructures through the tube wall.

27. A system as in claim 26, wherein the at least one microstructure projects radially outwardly from the tube a distance sufficient to penetrate the blood vessel.

28. A system as in claim 26, wherein the free end has a pointed shape.

29. A system as in claim 28, wherein the pointed shape includes a single point or a multiple point

30. A system as in claim 28, wherein the free end has an arrow shape including a pointed tip and at least one undercut that resists withdrawal of the free end from the blood vessel.

31. A system as in claim 26, wherein the first expandable body is configured for positioning within the first end of the tube.

32. A system as in claim 31, further comprising a second expandable body configured for positioning within the second end of the tube,

the second expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and at least one microstructure having an attached end attached to the body and a free end in an undeployed position, expansion of the second expandable body creating forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end projects radially outwardly from the longitudinal axis,

the second expandable body sized for positioning within the tube so that expansion of the body penetrates the at least one microstructures through the tube wall.

33. A system as in claim 32, wherein the blood vessel comprises a segment of an aorta having two iliac arteries therewith at an aortic bifurcation, and wherein the tube is shaped to be disposed within the aortic segment and the tube further comprises an opening between the first end and the second end to align with one of the iliac arteries.

34. A system as in claim 33, further comprising another tube shaped to be disposed within the one of the iliac arteries and to extend through the opening.

35. A system as in claim 34, further comprising a third expandable body configured for positioning within the another tube,

the third expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and at least one microstructure having an attached end attached to the body and a free end in an undeployed position, expansion of the second expandable body creating forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end projects radially outwardly from the longitudinal axis,

the third expandable body sized for positioning within the another tube so that expansion of the body penetrates the at least one microstructures through the another tube wall.

36. A system as in claim 26, wherein further comprising a material carried by the at least one microstructure, wherein the material is delivered to the patient by the at least one microstructure.

37. A system as in claim 36, wherein the material comprises DNA, a drug, VEGF, thrombin, collagen or any combination of these.

38. A system as in claim 36, wherein the material is coated on a surface of the at least one microstructure.

39. A system as in claim 36, wherein the material is held in a lumen within the at least one microstructure.

40. A method of treating an aneurysm in a blood vessel of a patient comprising the steps of:

providing an apparatus comprising a tube having a first end, a second end and a tube wall extending between the first and second ends, and at least one expandable body attached to the tube wall including at least one microstructure having first and second supports and a free end, the supports affixed to associate first and second adjacent portions of the at least one expandable body;

positioning the apparatus within the blood vessel and so that it extends across the aneurysm, wherein the at least one microstructure is in an undeployed position; and

expanding the at least one expandable body effecting relative movement between the associated first and second adjacent portions of the expandable body, the relative movement deploying at least one microstructure from the undeployed position to a deployed position wherein the at least one microstructure projects radially outwardly from the tube.

41. A method as in claim 40, further comprising expanding the at least one expandable body so that the deployed at least one microstructure penetrates a wall of the blood vessel.

42. A method as in claim 41, wherein the deployed at least one microstructure penetrates a wall of the blood vessel so that migration of the apparatus within the blood vessel is reduced.

43. A method as in claim 41, wherein the at least one microstructure comprises a plurality of microstructures in a predetermined arrangement, and wherein the deployed at least one microstructure penetrates a wall of the blood vessel so that the predetermined arrangement reduces leakage between the apparatus and the blood vessel.

44. A method as in claim 40, wherein the at least one expandable body comprises a first expandable body disposed near the first end and a second expandable body disposed near the second end, and wherein positioning the apparatus comprises positioning the first and second expandable bodies so that the aneurysm lies between the first and second expandable bodies.

45. A method as in claim 40, wherein the blood vessel comprises a segment of an aorta having two iliac arteries therewith at an aortic bifurcation and wherein the tube further comprises an opening between the first end and the second end, the method further comprising aligning the opening with one of the iliac arteries.

46 . A method as in claim 45, further comprising positioning an iliac graft within the one of the iliac arteries so that a portion of the iliac graft passes through the opening to connect with the apparatus.

47. A method as in claim 45, wherein the iliac graft further comprises at least one expandable body including at least one microstructure having an attached end

attached to its body and a free end, further comprising expanding the at least one expandable body of the iliac graft to deploy its at least one microstructure so that its free ends project radially outwardly through the wall of the apparatus to join the iliac graft to the apparatus.

48. A method as in claim 40, wherein the at least one microstructure carries a material and further comprising delivering the material to the patient.

49. A method as in claim 48, wherein the material is coated on a surface of the at least one microstructure and delivering the material comprises diffusion of the material from the surface of the at least one microstructure to the blood vessel.

50. A method as in claim 49, wherein delivering the material comprises diffusion of the material from the surface of the at least one microstructure to the aneurysmal sac.

51. A method as in claim 48, further comprising expanding the body so that the deployed at least one microstructure penetrates a wall of the blood vessel, wherein the material is coated on a surface of the at least one microstructure and delivering the material comprises transferring the material from the surface of the at least one microstructure to the penetrated blood vessel wall.

52. A method as in claim 48, further comprising expanding the body so that the deployed at least one microstructure penetrates a wall of the blood vessel, wherein the material is held in a lumen within the at least one microstructure, and delivering the material comprises injecting the material into the penetrated blood vessel wall.

53. A method as in claim 48, wherein the material comprises DNA, a drug, VEGF, thrombin, collagen or any combination of these.

54. A system for repair of an aneurysm in a blood vessel of a patient comprising:

a tube having a first end, a second end and a wall extending between the first and second ends, the tube shaped to be disposed at least partially within the aneurysm; and

an extension cuff having at least one expandable body attached to the cuff, the expandable body including at least one microstructure having an attached end attached to the body and a free end in an undeployed position, wherein expansion of the at least one

expandable body creates forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end of the at least one microstructure projects radially outwardly from the cuff and penetrates the wall of the tube so as to attach the cuff with the tube.

55. An system as in claim 54, wherein the at least one expandable body is attached to an exterior surface of the extension cuff.

56. An system as in claim 54, wherein the at least one expandable body is embedded within a wall of the extension cuff.

57. An system as in claim 54, wherein the at least one expandable body is attached to an interior surface of the extension cuff.

58. An system as in claim 54, wherein the blood vessel comprises a segment of an aorta having two iliac arteries therewith at an aortic bifurcation and the tube is shaped to have a main shaft, a first leg and a second leg.

59. An system as in claim 54, wherein penetration is insufficient to penetrate through and extend beyond the wall of the tube.

60. A system for repair of an aneurysm in a blood vessel of a patient comprising:

a tube having a first end, a second end and a tube wall extending between the first and second ends, the tube shaped to be disposed at least partially within the aneurysm;

a first expandable body having a proximal end, a distal end, a longitudinal axis therebetween, and at least one microstructure having an attached end attached to the body and a free end in an undeployed position, expansion of the body creating forces which deploy the at least one microstructure from the undeployed position to a deployed position wherein the free end projects radially outwardly from the longitudinal axis; and

an extension cuff having a cuff wall shaped to be disposed within the blood vessel;

the first expandable body sized for positioning within the tube and the cuff so that expansion of the body penetrates the at least one microstructures through the tube wall and cuff wall as to attach the cuff with the tube.

61. A method of treating an aneurysm in a blood vessel of a patient comprising the steps of:

providing a tube shaped to be disposed within an aneurysm;

positioning the tube within the blood vessel and so that it extends across the aneurysm;

providing an extension cuff having a cuff wall and at least one expandable body attached to the cuff wall, the expandable body including at least one microstructure having an attached end attached to the body and a free end in an undeployed position;

positioning the cuff within the blood vessel and so that it mates with the tube, wherein the at least one microstructure is in an undeployed position; and

deploying the at least one microstructure to a deployed position wherein the at least one microstructure projects radially outwardly from the cuff and penetrates the wall of the tube so as to attach the cuff with the tube.